Health Professions Education

Trainees' Perceptions of Patient Safety Practices: Recounting Failures of Supervision

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C ince the Institute of Medicine (IOM)'s report To Err Is Human ignited a reexamination of patient safety practices among medical centers in the United States,1 numerous strategies have been implemented to promote both patient and medical staff safety, including infection control, greater emphasis on continuity of care, system changes (for example, checklist implementation, medication reconciliation, rapid response teams), and limiting staff duty-hours.2 Clinical supervision is another means used to improve quality and adherence to patient safety practices.3 Supervision in this context has been conceptualized as "the provision of monitoring, guidance and feedback on matters of personal, professional and educational development in the context of the doctor's care of patients."4(p. 828) Thus, clinical supervisors have a large role in developing trainees' knowledge, skills, attitudes, and values and are chiefly responsible for creating situations for learning during patient encounters.5,6

Observations of diagnostic and therapeutic procedures and patient interactions constitute the core experiences during the final years of medical students' undergraduate medical education. As largely passive observers, medical students remain very much aware of their surroundings and social positioning within the medical hierarchy.7 They are closely supervised, in relation to clinical matters, and as such perform limited direct patient care and exercise even less independent judgment on appropriate clinical courses of action. Yet, on entry into graduate medical education, interns are quickly transitioned from observer into a role accompanied by a host of new responsibilities, authority, and accountability. Amid graduated levels of responsibility, supervisors must ensure residents receive appropriate levels of clinical duties and decision-making opportunities, in addition to maintaining effective monitoring and providing trainees with ongoing feedback on their performance. Although supervision of junior medical staff is a key component of the formal training process, it is one aspect that remains difficult to monitor, even more so during

Article-at-a-Glance

Background: Ensuring that trainees receive appropriate clinical supervision is one proven method for improving patient safety outcomes. Yet, supervision is difficult to monitor, even more so during advanced levels of training. The manner in which trainees' perceived failures of supervision influenced patient safety practices across disciplines and various levels of training was investigated.

Methods: A brief, open-ended questionnaire, administered to 334 newly hired interns, residents, and fellows, asked for descriptions of situations in which they witnessed a failure of supervision and their corresponding response.

Results: Of the 265 trainees completing the survey, 73 (27.5%) indicated having witnessed a failure of supervision. The analysis of these responses revealed three types of supervision failures—monitoring, guidance, and feedback. The necessity of adequate supervision and its accompanying consequences were also highlighted in the participants' responses.

Conclusions: The findings of this study identify two primary sources of failures of supervision: supervisors' failure to respond to trainees' seeking of guidance or clinical support and trainees' failure to seek such support. The findings suggest that the learning environment's influence was sufficient to cause trainees to value their appearance to superiors more than safe patient care, suggesting that trainees' feelings may supersede patients' needs and jeopardize optimal treatment. The literature on the impact of disruptive behavior on patient care may also improve understanding of how intimidating and abusive behavior stifles effective communication and trainees' ability to provide optimal patient care. Improved supervision and communication within the medical hierarchy should not only create more productive learning environments but also improve patient safety.

advanced levels of training.8-10

With its overriding objective of improving the patient care experience, several studies on supervision of trainees have found a significant impact on patient outcomes and adherence to medical treatment, especially in emergency and surgical care environments.^{8,9} More specifically, it has been found to reduce mortality in surgery, anesthesia, trauma, obstetrics, and pediatrics.^{8,10,11} Patient safety skills among trainees have been explored through review of hospital incident reports used to document medical errors or adverse events; however, these reports are often triggered by formal complaints, and therefore their contents do little to explain underlying processes of decision making in specific courses of action.¹²

More recently, Baldwin et al. published a study exposing the prevalence of inadequate supervision among a national sample of trainees, addressing a critical gap in the literature on the gravity of this phenomenon.¹³ Building on this work, the aim of the study reported in this article was to investigate the manner in which trainees perceived failures of supervision to influence patient safety practices among trainees in transition between training and independent practice. We believe that this is an optimal time in a medical career for such an exploration because learners may be less influenced by the consequential threat of revealing situations and yet are able to take fuller advantage of the opportunity to share, reflect, and hopefully learn from their experiences.¹⁴

Methods

DATA COLLECTION

Orientation and Workshop. The University of Michigan Health System (UMHS) requires all house officers new to the institution to participate in a mandatory orientation. Orientation includes four hours of lectures in one sitting on topics pertinent to new employees such as universal precautions, availability of free mental health consultation services, billing requirements, and the medical center's approach to patient safety.¹⁵

During the 2009–2010 academic year, new house officers also participated in a 45-minute workshop on patient safety led by the UMHS Department of Risk Management and the Office of Clinical Affairs. This workshop was developed with the assistance of the University of Michigan's Center for Research on Learning and Teaching.

The "Lives in Our Hands" workshop was developed specifically to address the issue of patient safety and supervision in health care settings. It was also designed to actively engage participants by asking them to use their personal experiences to clarify how the presented material could be applied in their future practice. Sufficient time (20 minutes) was allocated for participants' recollection of these specific experiences, as well as for reflection to stimulate a deeper understanding and applicability of the material. 16-18

In the workshop, new house officers were asked to reflect on a situation during their education in which they had witnessed a failure in supervision and their corresponding action, if any. To elicit the most candid responses, pre-workshop surveys were anonymous, but the level of education of the participants was identified. The workshop had been previously tested in a one-year period in multiple departmental settings with nurses, attendings, and residents; in view of positive feedback, no changes were made to the format. This study received exemption status from the University's Institutional Review Board.

PARTICIPANTS

In June and July 2009, 334 trainees—173 interns and 161 residents and fellows—participated in the workshop session. The participants originated from 139 different institutions; for 38 of the participants, the institutions were outside the United States.

DATA ANALYSIS

Data were analyzed using an interpretive thematic analysis that drew on the constant comparison method, which allows researchers to study printed material (for example, newspapers, letters, books, interviews) to establish how the originators of the documents view a particular phenomenon.^{19,20}

Authors [P.T.R., E.T.M, S.G.A., K.A.S., A.U.-F., M.L.L.] independently reviewed all responses from the pre-workshop survey and developed individual sets of themes, using each response as the unit of analysis. Authors then met multiple times over the course of several months to discuss their independent findings. New themes were added until theoretical saturation was achieved (that is, no new themes emerged from the review of the data). Themes were consolidated into exclusive themes and finalized through lengthy discussions and repeated comparison until consensus was obtained. Authors then revisited the pre-workshop survey responses to verify that all themes were represented in the final list and, on verification, categorized survey responses into the final themes.

Findings

WITNESSING A FAILURE OF SUPERVISION

As shown in Table 1 (page 90), of a total of 334 workshop attendees, 265 (79%) responded to the question, "Have you

Table 1. Responses to "Have You Ever Witnessed a Failure of Supervision?"*						
	Yes		No		Total	
Education Level	n	%	n	%	n	%
но і	51	19.2%	116	43.8%	167	63.0%
HO II	5	1.9%	18	6.8%	23	8.7%
HO III	0	0	1	0.4%	1	0.4%
HO IV	5	1.9%	30	11.3%	35	13.2%
HO V	6	2.3%	12	4.5%	18	6.8%
HO VI and above	4	1.5%	14	5.3%	18	6.8%
Unknown	2	0.8%	1	0.4%	3	1.1%
Totals	73	27.5%	192	72.5%	265	100%

^{*} Based on responses from 265 of 334 attendees (79% response rate). HO I, house officer, first-year postgraduate

ever witnessed a failure of supervision?"

Four major domains resulted from the analysis of the affirmative responses: categories of failures of supervision, deterrents to seeking supervision, consequences of the lack of supervision, and the value of supervision (Table 2, page 91).

CATEGORIES OF FAILURES OF SUPERVISION

Monitoring. Direct clinical oversight of procedures, such as central venous line placements and lumbar puncture and paracenteses, often serves as a mechanism to circumvent medical errors. ²¹⁻²³ The failures described by participants included examples such as the refusal of attending physicians to come into the hospital, despite trainees' expectation that attendings would provide direct oversight for clinical procedures. The participants provided numerous accounts of situations in which their superior was either unavailable for clinical observations or unapproachable. Participants described how they, or other junior medical staff, performed procedures without expected direct supervision of senior staff.

What was the situation: The fellow was working with an attending whom he felt was always very malignant to him, condescending toward him even in front of patients. The fellow said he always felt inadequate and ridiculed when working with her; nothing adverse happened to patients but attending was very upset with fellow because she was not aware of what happened to patient. The patient had been given too much Benadryl on the floor and became altered mentally. The fellow evaluated the patient correctly and even had the PICU [pediatric intensive care unit] fellow come to evaluate the patient for backup, who also agreed with his assessment plan.

What did you do: (Not answered; HO IV [house officer, fourth-year postgraduate])

What was the situation: A first-year resident attempted to manage a patient alone with status epilepticus because of fear of calling the supervising staff.

What did you do: Inform the staff of mismanagement. (HO V)

Guidance. Participants also described situations in which they would have welcomed guidance and advice from senior staff. The lack of supervision in these situations reportedly caused many trainees to perform tasks beyond their training and ability. Furthermore, in the minds of some, the absence of direct supervision resulted simply in poor communication; guidance was provided over the telephone, limiting the inperson assessment of the patient situation.

What was the situation: At a previous institution, because of intimidating faculty members, the fellow would try to handle calls and workload without calling for help. It caused an escalating situation with poor communication to the attending, who would routinely chastise the fellow on rounds.

What did you do: I spoke to the chair of internal medicine about confronting both the faculty and fellow to resolve issue. I opened an internal review, which is ongoing. (HO V)

Feedback. Feedback on performance is one of the most important ways of honing professional techniques and skills. Participants described the various responses received from superiors in their search for advice. Among those witnessing failures in supervision, participants noted the lack of positive feedback or reinforcement, which would provide them with critical information to help them improve and learn from a particular experience. Participants suggested that the communication with their superiors was more often negative.

Table 2. Quantitative Description of Essay Findings

	n (%) of	
Domains/Themes	Total Responses	
Categories of Failures of Supervision		
Monitoring	11 (9%)	
Guidance	16 (13%)	
Feedback	9 (7%)	
Deterrents to Seeking Supervision		
Fear	15 (12%)	
Powerlessness	18 (14%)	
Trusted My Supervisors	9 (7%)	
Middle of the Night	12 (9%)	
Consequences of the Lack of Supervision	15 (12%)	
Value of Supervision	13 (10%)	
Unrelated Responses	9 (7%)	
Total	127 (100%)	

What was the situation: As a medical student, I was always apprehensive to call consultants, especially cardiology and/or neurosurgery. The fear wasn't unwarranted, because they continually gave me static and made me feel dumb for calling them even if I was just following orders.

What did you do: Called them anyway and tried to be as pleasant and courteous as possible. (HO V)

What was the situation: I witnessed several residents and students not calling the attending or senior residents because of fears of being yelled at, ridiculed, and talked about behind their backs to others. I've also seen the upper-level staff berate those "lower" staff publicly.

What did you do: Usually, I could do nothing but stand by and watch. (HO V)

DETERRENTS OF SEEKING SUPERVISION

Many participants expressed their reluctance to contact superiors because of fear, feelings of powerlessness, concerns for disrupting the medical hierarchy, or simply worries about disturbing superiors in the middle of the night. Because medicine is learned through immersion into the culture, role-modeling, and experiential learning models, student observations of those in higher positions constitutes much of the learning experience.

Multiple Sources of Fear. Trainees of all levels expressed their fear to seek guidance or assistance at some point in their education. Their accounts included incidents in which they were afraid to call the attending, especially those with reputations for being difficult. Many trainees felt that their fears could be

allayed with better preparation and fact gathering. Some waited until they had multiple patients or problems to report. Fears appeared to derive from both previous personal experiences and witnessing the ridicule of others or from fears expressed by costudents and other caregivers, such as residents, fellows, and nurses. In the absence of direct supervision, students consequently often turned to one another for advice in situations they perceived as difficult, challenging, or uncertain.

What was the situation: An HO II in internal medicine was scared to call an attending in surgery about a patient with a surgical concern/emergency. Her fear was well founded because the attending was livid at being paged and verbally chastised the resident She ended up in tears.

What did you do: I was merely an observer. (HO I)

What was the situation: A senior resident didn't want to page the attending about an ICU admission because the attending was known to be very critical and very demanding. The case wasn't particularly complex or unstable, so the resident figured that the attending could find out in the morning, rather than at 1:00 A.M.

What did you do: Encouraged the resident to call. Helped her gather the information she needed. Told her it was better to prevent any problems rather than call her after something bad had happened. (HO II)

Powerlessness. Participants acknowledged that although alternative courses of action would have improved patient care, they often felt unable to follow that particular path. However, many trainees believed that their role was primarily that of observer and as such, felt powerless to challenge or oppose the care decision or diagnosis made by others. Participants frequently relinquished their responsibility by stating that they were "just a student" and therefore not in a position to take action:

What was the situation: A resident didn't call an attending during an overnight ICU care about an unstable patient. On decline of respiratory status, the patient had to be emergently intubated. The attending didn't find out about the patient's instability until rounds next morning.

What did you do: I felt that a senior or an attending should be contacted but I didn't feel as a medical student that it was my place to say anything. (HO I)

One resident recalled explicit instructions not to call superiors:

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What was the situation: A patient in the ED [emergency department] had persistent high fever. I wanted to call a superior. The nurse said "not to bother" superiors. The patient decompensated and needed intubation.

What did you do: Nothing—I was a medical student. (HO I)

What was the situation: The senior resident during my subinternship fourth year gave me the call pager at night and told me not to call him no matter what. This happened on several occasions.

What did you do: I tried to handle more than I should have, but ultimately I called the intern on call when I needed help. (HO I)

Trusted My Superiors. As novice clinicians, participants believed that they did not possess the clinical acumen for making independent clinical decisions. In addition, participants reported that the deeply engrained medical hierarchy appears to deter junior staff from exerting autonomy and independence and reinforces the importance of knowing their place. Such a hierarchy may likewise shelter those who lack confidence to be independent. Many decided to trust their superiors to make the best decision for the patient:

What was the situation: As a fourth-year medical student, I admitted a patient to the floor, and when I went to do the H & P [history and physical examination], I was very concerned about the infant's stability, so I called my senior and had her come to bedside. I thought we should call the attending, but both my senior and the night-float senior thought that we could handle it. We did keep her stable overnight, and she did end up in the PICU first thing in the morning, but I often wonder if it hadn't been for the fact that she came in so late (we were doing her LP [lumbar puncture] at 4:00 A.M., so up with her almost all night), what would have happened?

What did you do: I trusted my seniors to know their limits, but based on the final disposition of the patient and the livid reaction of the attending at not being called, I'm not sure that was the right choice. I should have at least suggested that we wake the in-house PICU fellow to see this kid. (HO I)

Middle of the Night. A frequent barrier that emerged in the situation descriptions was perceived as an inability to contact the attending in the "middle of the night." Not only did trainees believe they were discouraged from contacting their attending, generally this message was intensified during the offshift hours. Participants noted that their fellow interns or resi-

dents often needed prodding and encouragement to make the call, especially in cases in which there was the potential of reprimand or ridicule:

What was the situation: As an intern, I witnessed other interns' and residents' apprehensiveness to call an attending in the middle of the night to notify her or him of an admission of change in status.

What did you do: I provided assurance to intern/resident to call anyway. (HO V)

What was the situation: I worried about looking bad by waking up the attending in middle of night for advice.

What did you do: I did not intervene. I tried to focus on my role as a resident. (HO IV)

CONSEQUENCES OF LACK OF SUPERVISION

Participants described numerous untoward and preventable outcomes that occurred during periods of lapses in supervision. Specific consequences witnessed by participants included the mismanagement of patient care, critical situations nearly resulting in death, and duty-hour violations:

What was the situation: I was providing facial trauma consults to Oral Maxillofacial Surgery at an outside children's hospital, where a child was rushed to the OR [operating room] with multiple orthopedic fractures and facial lacerations/fractures. I called the chief resident, who refused to call the attending to come to the OR to cover the case. The chief resident also refused to come to the hospital. I was told to repair the patient's facial lacerations in the OR by myself. The attending eventually demanded that my attending be present, so the case was aborted after the lacerations were mostly completed.

What did you do: I did the best that I could for the patient's best interests. The next day we rounded on the patient for additional care. (HO I)

VALUE OF SUPERVISION

Many participants provided examples of situations in which they realized they should have had adequate supervision and did not. In academic medical settings, trainees may not yet possess the medical knowledge, skills, or expertise necessary to perform various clinical procedures, and proper supervision has an intrinsic value to patient care:

What was the situation: I was involved in a procedure with a resident without the supervision of an attending because the attending felt it was "routine."

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What did you do: I observed the situation but was left with a bad feeling. Even with simple procedures, there should be appropriate supervision. Just because a procedure is "routine" for an attending, it is not routine for interns, residents, or patients. (HO I)

What was the situation: A medical student was placing an A-line (arterial-line) without resident supervision. The student attempted the procedure several times without success. The patient appeared to be in pain. The fellow eventually came to complete the procedure.

What did you do: The team discussed the incident with the attending and the need for better communication and supervision. (HO I)

What was the situation: The lack of supervision was as an issue when a patient coded because cardiology was not paged two days earlier. Although possibly an inevitable complication, it could have been avoided if the concern had been taken seriously.

What did you do: I expressed my concerns. (HO I)

Interestingly, none of the second-year and more senior participants emphasized the value of supervision. Perhaps trainees at these advanced stages of education are more interested in progressive responsibility and autonomy rather than supervision.

Discussion

In this study, the sense of inadequate supervision appears to originate from the supervisors' failure to respond to trainees needing guidance or clinical support and trainees' failure to seek support. It is plausible that both failures could be attributed to the structure of clinical education. For example, although the Accreditation Council for Graduate Medical Education (ACGME) mandates supervision of trainees, its instructions allow for progressive and increasing levels of responsibility for patient care, in accordance with education, experience, and expertise.24 Many supervisors may rationalize that failure to respond with direct supervision in a clinical situation as a part of the training process, which affords trainees an opportunity to gain experience and empower them to make clinical decisions. Because direct supervision of trainees' ability and performance level is time-consuming, failures to supervise could result from superiors unwilling to commit the time needed.^{9,11} Unfortunately, all too often the incentive for adequate supervision at the postgraduate level is viewed synonymously

with activities that satisfy billing guidelines (for example, attendings' countersignature of a note, resident's nonacknowledgment of attendings' involvement), and too often, the consequences of inadequate supervision are seen as little more than writing off the cost of care. 25,26 This model is undeniably limited in that trainees may require a physical presence by senior staff to successfully acquire progressive responsibility and autonomy that will ultimately underscore patient safety as a priority. As acknowledged by others, widely used apprenticeship models of supervision warrant further revision to adopt principles that relate to graduated levels of responsibility needed in today's residency teaching programs.^{22,27} Models such as the Resident Supervision Index (RSI), developed by Kasher et al., may provide a framework by which program directors can monitor and improve supervision using standardized measures.28 This approach also addresses the complexities and challenges of supervision at varying levels of training and emphasizes the assessment of resident competence by those most familiar with their abilities.

The results of this study highlight the importance of a culture in which supervisors are accessible and readily available to respond to the inquiries by junior medical staff. 4,29 Appropriate supervision is an important, yet uncomplicated safeguard against medical errors in the clinical setting. Hence, clinical supervisors must exercise discretion regarding the appropriate level and form of supervision required for individual trainees and serve as the primary model for observation and feedback and the monitoring progress. 11,30 The IOM report Resident Duty Hours: Enhancing Sleep, Supervision, and Safety recommended enhanced supervision as one method of improving patient safety.31 There is evidence from our study that supervision is seen as a potential improvement on the part of many house staff. In particular, the interns' responses in our study seem to support the IOM's recommendation that first-year residents' on-duty hours be prohibited when immediate access to an in-house supervisor is unavailable.31 Failures in supervision jeopardize patient safety, precluding opportunities for supervisors to assume responsibility for care that proves too complex for the trainee's level of expertise.26 Trainees who perform procedures beyond their expertise or make clinical decisions that extend beyond their experience threaten patient safety and erode a culture of safety.

Similarly, the literature on the impact of disruptive behavior on patient care may also improve our understanding of the ways in which intimidating and abusive behavior stifles effective communication and trainees' ability to provide optimal patient care. This study, as have other studies, illustrates how trainees call on previous experiences with their superiors as they make independent decisions about how to proceed with patient care delivery, reporting of adverse events, or even reporting of verbal assaults or other abuses of power.^{32,33} In addition, we found that trainees encounter disruptive behavior on the part of the their supervisors and other members of the health care team. This disruption does affect patient care, given that many trainees refuse to engage and often put patients at risk because of the fear of retaliation.

Supervision lapses also emerge as a consequence of trainees' failure to contact superiors. Our findings parallel similar results found in the literature, which explain trainees' reluctance to seek appropriate clinical support by senior staff because they are afraid of ridicule, gaps in knowledge, perceived expectations and pressures for clinical independence, professional credibility, and feelings of inadequacy.^{25,26,34-36} In addition, a recent study exploring telephone communication between residents and attendings supported the notion of "mixed signals" from supervisors instructing trainees to initiate guidance and support.37 Our findings are perhaps more dependable and transferable, given the number of various institutions from across the globe from which the residents hail. This may truly be a global issue of supervision in medicine. These explanations are inherently intertwined with the "hidden curriculum," that is, the unintentional learning that occurs by way of observations and unwritten content, and directly reflect the clinical learning environment in which new trainees learn and practice medicine. The learning environment represents the atmosphere and the types of behaviors that are encouraged, rewarded, and emphasized.³⁸ The learning environments described by our participants appeared to undermine learning; trainees expressed extreme reluctance to seek guidance or advice from superiorsespecially during the nighttime hours. 11,23 Furthermore, our findings suggest that the learning environment's influence was sufficient to cause trainees to value their appearance to superiors more than safe patient care, suggesting that trainees' feelings may supersede patients' needs and jeopardize optimal treatment. Learning environments that stifle good social support and appropriate levels of autonomy hamper what is learned and affect trainees' attitudes and behaviors.39 Recommendations such as those posed in the UNMET NEEDS: Teaching Physicians to Provide Safe Patient Care report suggest that institutions should establish a zero-tolerance policy regarding disruptive and unprofessional behavior as a strategy clarifying that the institutional culture reflects the organization's commitment to patient safety, professionalism, and collaborative behavior.⁴⁰

In addition to patient safety concerns, other consequences of

inadequate supervision are the missed opportunities for learning, teaching, and feedback.⁴¹ Improved supervision and communication within the medical hierarchy will not only create more productive learning environments but also improve patient safety by addressing behaviors that would otherwise be undetected or uncorrected.²³ This study also confirms the extent to which the hidden curriculum continues to influence the patient safety culture of medical institutions. Because much learning derives from observing role models, poor safety culture produces more inadequate role models. In the absence of supervision, interns do not receive clear clinical directives and guidelines and tend to base decision making primarily on the basis of previous experiences.^{42,43}

Limitations

There were several limitations to this study. We did not ask the specific circumstances involved in the perceived failures in supervision, and as such, there may have been supervisory activities in which the trainee was not made aware. This study is also limited by its reliance on trainees' perceptions and selfreporting, which may have subjected the findings to recall bias and may not have fully captured the circumstances in which these observations were made. Because many of the participants were interns, most of their experiences with ineffective supervision occurred while they were students, as opposed to being registered in a formal graduate training program. Also, because the survey question prompt used being "fearful" to act as an example of a failure of supervision, the prevalence of fear as a final theme was to be anticipated. Nonetheless, fear represented only one of nine final themes reported by trainees. Finally, we only asked trainees about failures, and, therefore, we did not capture experiences involving effective supervision.

Conclusions

This pre-workshop survey allowed us to capture experiences of incoming interns, residents, and fellows and to prompt them to articulate the importance of contacting appropriate personnel, seeking advice from superiors, and communicating with other health care professionals. Given that the study captures the experiences of newly hired interns or residents from 139 institutions, we suggest that improvements in both undergraduate and graduation medical education are needed to overcome feelings of fear that affect appropriate patient safety practices. Perhaps most importantly, we acknowledge the noteworthy collaborative efforts of graduate medication education, risk management, and clinical affairs in ensuring trainees receive appropriate supervision to promote patient safety.

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Online-Only Content

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Appendix 1. "Lives in Our Hands" Pre-Workshop Survey

References

- 1. Institute of Medicine: *To Err Is Human: Building a Safer Health System.* Washington DC: National Academy Press, 1999.
- 2. Leape L.L., Berwick D.M.: Five years after *To Err Is Human*: What have we learned? *JAMA* 293:2384–2390, May 18, 2005.
- 3. Bell B.M.: Supervision, not regulation of hours, is the key to improving the quality of patient care. *JAMA* 269:403–404, Jan. 20, 1993.
- 4. Kilminster S.M., Jolly B.C.: Effective supervision in clinical practice settings: A literature review. *Med Educ* 34:827–840, Oct. 2000.
- 5. Laitinen-Väänänen S., Talvitie U., Luukka M.R.: Clinical supervision as an interaction between the clinical educator and the student. *Physiother Theory Pract* 23:95–103, Mar.–Apr. 2007.
- 6. Frisch S.R., et al.: Increasing the effectiveness of clinical supervision. *Can Med Assoc J* 131:569–572, Sep. 15, 1984.
- 7. Cox K.: Examining and recording clinical performance: A critique and some recommendations. *Educ Health (Abingdon)* 13(1):45–52, 2000.
- 8. Sox C.M., et al.: The effect of supervision of residents on quality of care in five university-affiliated emergency departments. *Acad Med* 73:776–782, Jul. 1998.
- 9. Farnan J.M., et al.: On-call supervision and resident autonomy: From micromanager to absentee attending. *Am J Med* 122:784–788, Aug. 2009.
- 10. McKee M., Black N.: Does the current use of junior doctors in the United Kingdom affect the quality of medical care? *Soc Sci Med* 34:549–558, Mar. 1992.
- 11. Fallon W.F. Jr., Wears R.L., Tepas J.J. 3rd: Resident supervision in the operating room: Does this impact on outcome? *J Trauma* 35:556–561, Oct. 1993.
- 12. Logio L.S., Ramanujam R.: Medical trainees' formal and informal incident reporting across a five-hospital academic medical center. *Jt Comm J Qual Patient Saf* 36:36–42, Jan. 2010.
- 13. Baldwin D.C., et al.: How residents view their clinical supervision: A reanalysis of classic national survey data. *J Grad Med Educ* 2:37–45, Mar. 2010.
- 14. Farnan J.M., et al.: Resident uncertainty in clinical decision making and impact on patient care: A qualitative study. *Qual Saf Health Care* 17:122–126, Apr. 2008. 15. Lypson M.L., et al.: Assessing residents' competencies at baseline: Identifying the gaps. *Acad Med* 79:564–570, Jun. 2004.
- 16. Knowles M.: Self-Directed Learning: A Guide for Learners and Teachers. New York City: Cambridge, 1975.
- 17. Kaufman D.M.: Applying educational theory in practice. *BMJ* 326(7382):213–216, Jan. 25, 2003.
- 18. Spencer J., Jordan R.: Learner centered approaches in medical education. BMJ 313(7193):1280–1283, May 8, 1999.

- 19. Hsieh H.F., Shannon S.E.: Three approaches to qualitative content analysis. *Qual Health Res* 15:1277–1288, Nov. 2005.
- 20. Krippendorff K.: Content Analysis: An Introduction to Its Methodology. Thousand Oaks, CA: Sage Publications, 2004.
- 21. Rosenthal M.M., et al.: Beyond the medical record: Other modes of error acknowledgment. *J Gen Intern Med* 20:404–409, May 2005.
- 22. Smith C.C., et al.: Creation of an innovative inpatient medical procedure service and a method to evaluate house staff competency. *J Gen Intern Med* 19(pt. 2):510–513. May 2004.
- 23. Sutcliffe K.M., Lewton E., Rosenthal M.M.: Communication failures: An insidious contribution to medical mishaps. *Acad Med* 79:186–194, Feb. 2004.
- 24. Flynn T.: Resident supervision. *ACGME Bulletin*, Sep. 2005. http://www.acgme.org/acWebsite/bulletin/bulletin09_05.pdf (last accessed Dec. 14, 2010).
- 25. Kennedy T.J., et al.: Preserving professional credibility: Grounded theory study of medical trainees' requests for clinical support. *BMJ* 338:b128, Feb. 9, 2009.
- 26. Kennedy T.J., et al.: 'It's a cultural expectation...' The pressure on medical trainees to work independently in clinical practice. <u>Med Educ 43:645–653, Jul. 2009.</u>
- 27. Kennedy T.J., et al.: Clinical oversight: Conceptualizing the relationship between supervision and safety. *J Gen Intern Med* 22:1080–1085, Aug. 2007. Epub Jun. 8, 2007.
- 28. Kashner T.M., et al.: Measuring progressive independence with the resident supervision index: Theoretical approach. *J Grad Med Educ* 2:8–16, Mar. 2010.
- 29. Busari J.O., Koot B.G.: Quality of clinical supervision as perceived by attending doctors in university and district teaching hospitals. *Med Educ* 41:957–964, Oct. 2007. Epub Aug. 31, 2007.
- 30. Aron D.C., Headrick L.A.: Educating physicians prepared to improve care and safety is no accident: It requires a systematic approach. *Qual Saf Health Care* 11:168–173, Jun. 2002.
- 31. Institute of Medicine: Resident Duty Hours: Enhancing Sleep, Supervision, and Safety. Washington, DC: National Academies Press, 2009.
- 32. Saxton R., Hines T., Enriquez M.: The negative impact of nurse-physician disruptive behavior on patient safety: A review of the literature. *J Patient Saf* 5:180–183, Sep. 2009.
- 33. Rosenstein A.H., O'Daniel M.: A survey of the impact of disruptive behaviors and communication defects on patient safety. *Jt Comm J Qual Patient Saf* 34:464–471, Aug. 2008.
- 34. Farnan J.M., Humphrey H.J., Arora V.: Supervision: A 2-way street. *Arch Intern Med* 168:1117, May 26, 2008.
- 35. Stewart J.: 'Don't hesitate to call'—The underlying assumptions. *Clin Teach* 4:6–9, Mar. 2007.
- 36. Kennedy T.J., et al.: Progressive independence in clinical training: A tradition worth defending? *Acad Med* 80(10 suppl.):S106–S111, Oct. 2005.
- 37. Phitayakorn R.: Patient-care-related telephone communication between general surgery residents and attending surgeons. *J Am Coll Surg* 206:742–750, Apr. 2008. Epub Feb. 21, 2008.
- 38. Genn J.M., Harden R.M.: What is medical education here really like? Suggestions for action research studies of climates of medical education environments. *Med Teach* 8:111–124, Jan. 1986.
- 39. Hoff T.J., Pohl H., Bartfield J.: Creating a learning environment to produce competent residents: The roles of culture and context. <u>Acad Med 79:532–539</u>, Jun. 2004.
- 40. National Patient Safety Foundation: Press Release: New Lucian Leape Institute Report Finds That U.S. Medical Schools Are Falling Short in Teaching Physicians How to Provide Safe Patient Care. http://www.npsf.org/pr/pressrel/2010-03-10.php (last accessed Dec. 14, 2010).
- 41. Shojania K.G., Fletcher K.E., Saint S.: Graduate medical education and patient safety: A busy—and occasionally hazardous—intersection. *Ann Intern Med* 145:592–598, Oct. 17, 2006.
- 42. Bennett N., et al.: Hidden curriculum in continuing medical education. <u>J</u> Contin Educ Health Prof 24:145–152, Summer 2004.
- 43. Lempp H., et al.: Impact of educational preparation on medical students in transition from final year of PRHO year: A qualitative evaluation of final-year training following the introduction of a new year 5 curriculum in a London medical school. *Med Teach* 26:276–278, May 2004.

Online-Only Content

Appendix 1. "Lives in Our Hands" Pre-Workshop Survey*								
Education Level:								
□ HO I □ HO II □ HO IV □ HO V □ HO VI and above								
Have you ever witnessed a failure of supervision? (e.g., a fellow fearful of calling an attending, a nurse fearful to call a nurse manager)								
□ YES □ NO								
What happened in that situation?								
What did you do in that situation?								
* HO I, house officer, first-year postgraduate.								